

CLAIMS

1. A method for producing a minus-strand RNA viral vector, which comprises using a promoter comprising a cytomegalovirus enhancer and a chicken β -actin promoter to induce, in a virus-producing cell, (i) the transcription of a minus-strand RNA virus genome RNA or the complementary strand thereof, and (ii) the expression of minus-strand RNA viral proteins that form a ribonucleoprotein with the genome RNA.
2. The method of claim 1, which comprises the step of transcribing in the virus-producing cell, a DNA that encodes a ribozyme and the minus-strand RNA virus genome RNA or the complementary strand thereof and that is operably linked with the promoter comprising the cytomegalovirus enhancer and chicken β -actin promoter, wherein the ribozyme has an activity of cleaving the transcript between the ribozyme and the genome RNA or the complementary strand thereof.
3. The method of claim 1, which comprises the steps of:
expressing a bacteriophage RNA polymerase-encoding DNA under the control of the cytomegalovirus enhancer and chicken β -actin promoter-comprising promoter in the virus-producing cell; and
transcribing with the RNA polymerase, a DNA that encodes the minus-strand RNA virus genome RNA or the complementary strand thereof, and that is operably linked with a recognition sequence of the RNA polymerase in the virus-producing cell.
4. The method of claim 2, wherein the ribozyme is a hammerhead ribozyme.
5. The method of claim 3, wherein the RNA polymerase-encoding DNA is expressed episomally in the virus-producing cell.
6. The method of claim 3, wherein the RNA polymerase-encoding DNA is expressed from a chromosome in the virus-producing cell.
7. The method of claim 3, wherein the bacteriophage is selected from the group consisting of SP6 phage, T3 phage, and T7 phage.
8. The method of claim 1, wherein the minus-strand RNA virus is Sendai virus.

9. The method of claim 1, wherein the genome RNA or the complementary strand thereof lacks one or more genes encoding an envelope-constituting protein, and wherein the method further comprises the step of expressing a DNA encoding an envelope-constituting protein in the cell.

5 10. A DNA that encodes a ribozyme and a minus-strand RNA virus genome RNA or the complementary strand thereof and that is operably linked with a promoter comprising a cytomegalovirus enhancer and a chicken β -actin promoter, wherein the ribozyme has an activity of cleaving a transcript between the ribozyme and the minus-strand RNA virus genome RNA or the complementary strand thereof.

10 11. The DNA of claim 10, wherein the genome RNA or the complementary strand thereof lacks one or more genes encoding an envelope-constituting protein.

12. The DNA of claim 10, wherein the minus-strand RNA virus is Sendai virus.

15 13. The DNA of claim 10, wherein the ribozyme is a hammerhead ribozyme.

14. The DNA of claim 10, wherein the DNA expression is inducible by a recombinase.

20 15. The DNA of claim 14, wherein the recombinase is Cre or Flp.

16. A bacteriophage RNA polymerase-encoding DNA that is operably linked with a promoter comprising a cytomegalovirus enhancer and a chicken β -actin promoter.

25 17. The DNA of claim 16, wherein the bacteriophage is selected from the group consisting of SP6 phage, T3 phage, and T7 phage.

18. The DNA of claim 16, wherein the expression of the DNA is inducible by a recombinase.

30 19. The DNA of claim 18, wherein the recombinase is Cre or Flp.

20. A mammalian cell maintaining the DNA of claim 10.

21. The mammalian cell of claim 20, which is a cell for minus-strand RNA virus production.

35 22. The mammalian cell of claim 20, wherein the genome RNA or the complementary strand

thereof lacks one or more genes encoding an envelope-constituting protein.

23. The mammalian cell of claim 20, wherein the minus-strand RNA virus is Sendai virus.

5 24. A mammalian cell maintaining the DNA of claim 16.

25. The mammalian cell of claim 24, which is a cell for minus-strand RNA virus production.

10 26. The mammalian cell of claim 24, which further maintains a DNA that encodes a
minus-strand RNA virus genome RNA or the complementary strand thereof and that is operably
linked with a recognition sequence of the RNA polymerase.

27. The mammalian cell of claim 26, wherein the genome RNA or the complementary strand
thereof lacks one or more genes encoding an envelope-constituting protein.

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28. The mammalian cell of claim 25, wherein the minus-strand RNA virus is Sendai virus.